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**APPENDIX A**

**USGS TOPOGRAPHIC MAP**

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\\HW-2009-09113\CD\DWG\09113-Topo.dwg Linkey Nov 18, 2009

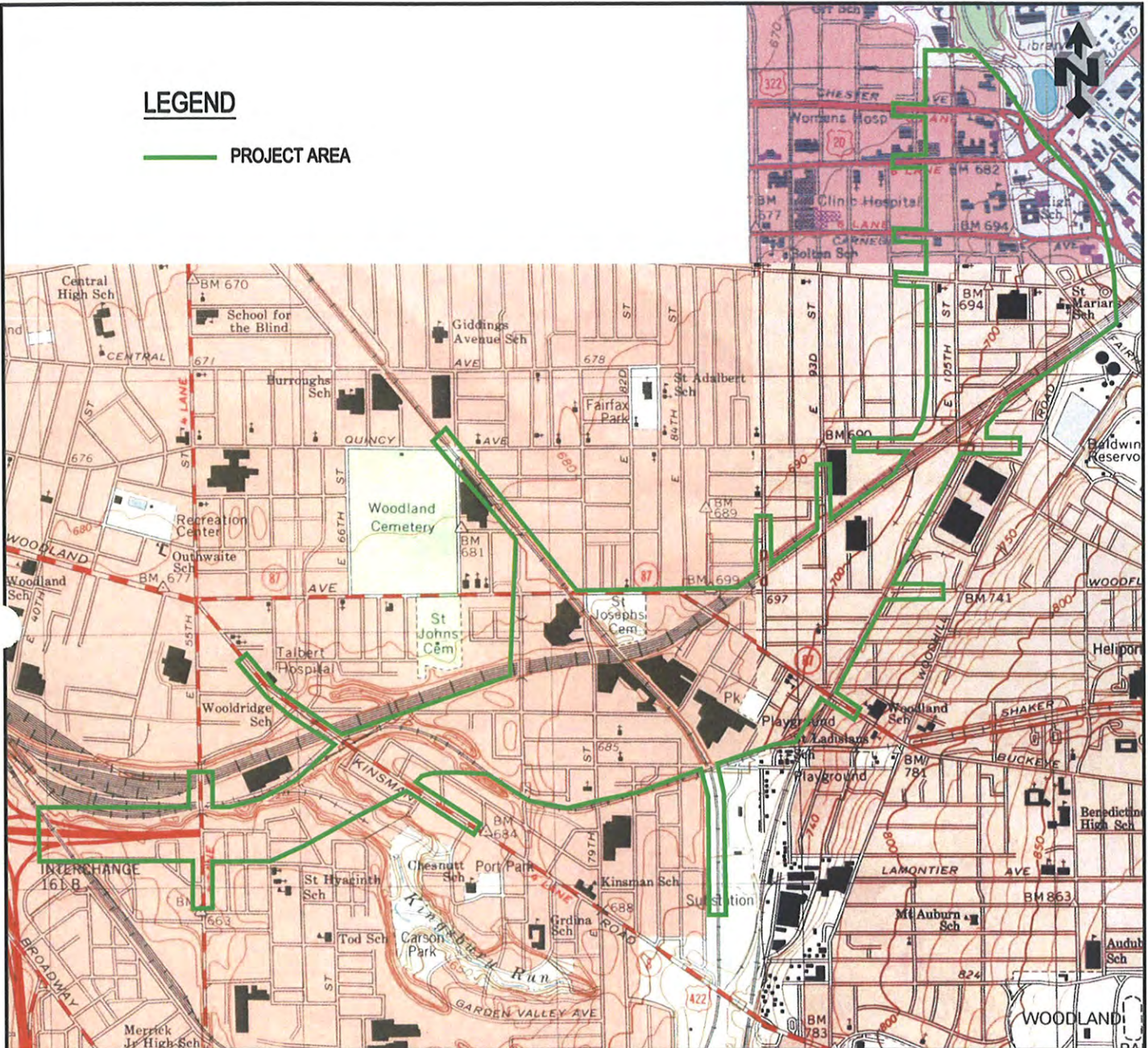
# USGS TOPOGRAPHIC MAP

1994 CLEVELAND SOUTH, 1994 SHAKER HEIGHTS,  
1994 EAST CLEVELAND OHIO QUADRANGLES



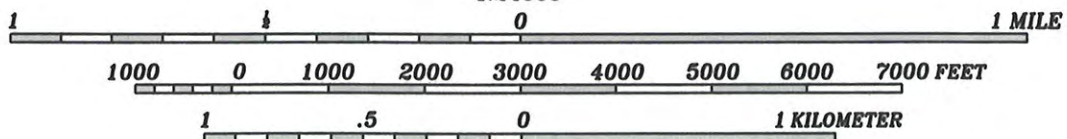
## LEGEND

 PROJECT AREA



## SCALE

1:24000



HW ENVIRONMENTAL  
CONSULTANTS, LLC

OPPORTUNITY CORRIDOR  
CLEVELAND, CUYAHOGA COUNTY, OHIO

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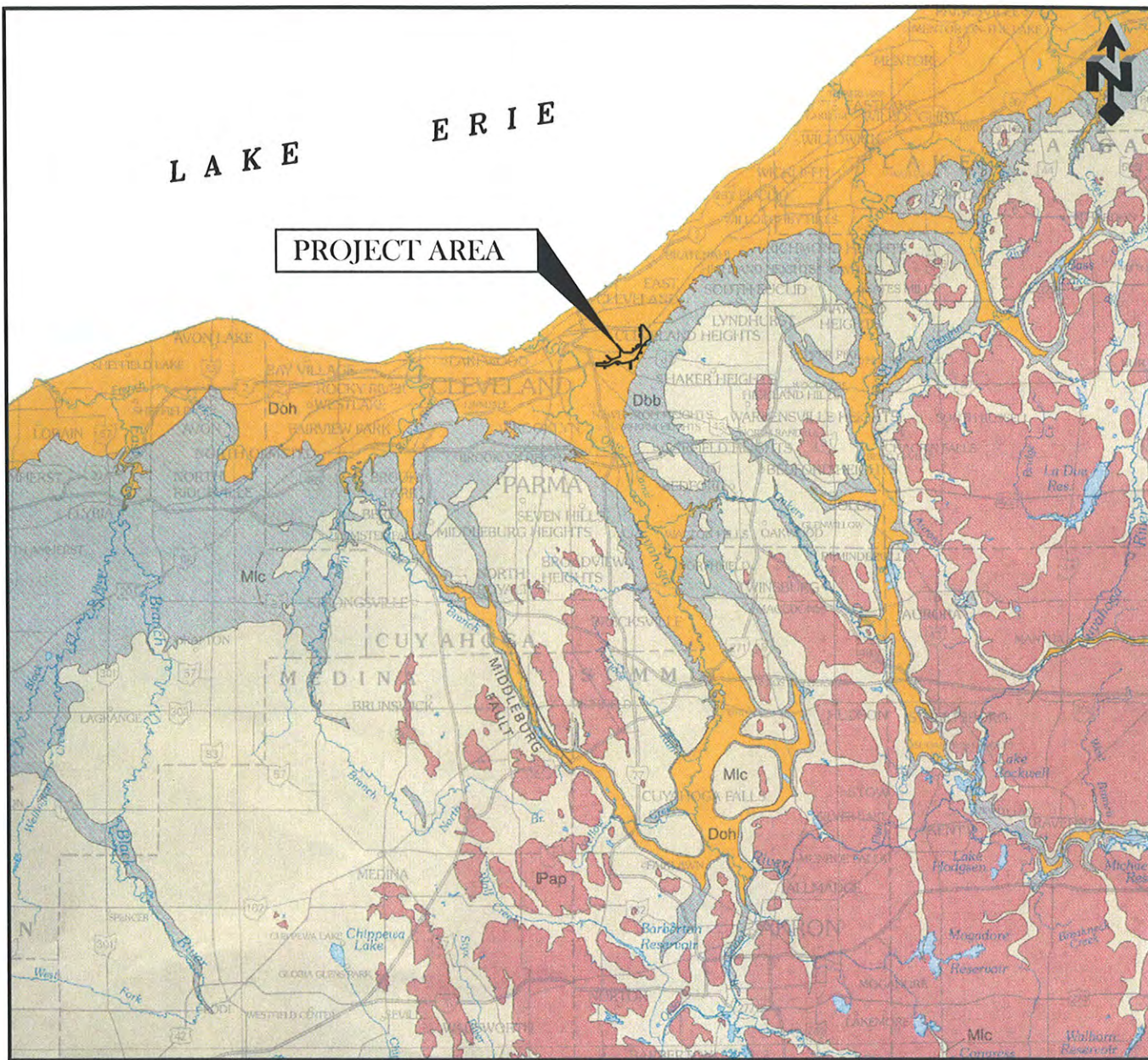
## **APPENDIX B**

### **BEDROCK GEOLOGIC MAP**

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# 2006 BEDROCK GEOLOGIC MAP OF OHIO



## LEGEND

Doh

**Ohio Shale (Upper Devonian)** (mapped interval includes Olentangy Shale south of central Delaware County)—Unit consists generally of three members, in descending order: Cleveland, Chagrin, and Huron Members. Cleveland Member, shale; black; thickest in north-central portion of state; thins south and eastward; absent in northeastern portion of state. Chagrin Member, shale, siltstone, and very fine-grained sandstone; gray to greenish gray; thickest in northeastern portion of state; grades into underlying and overlying black shale members; thins southwestward, becomes Three Lick Bed in southern portion of state. Huron Member, shale; mostly black; carbonaceous; calcareous concretions common in lower portion. Olentangy Shale, mostly upper portion; thin; present but not mapped as separate unit south of central Delaware County; absent on Bellefontaine Outlier; see Olentangy Shale for description. Unit structurally deformed in Serpent Mound Impact Structure (see fig. 3).



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## **APPENDIX C**

### **BEDROCK TOPOGRAPHY MAP**

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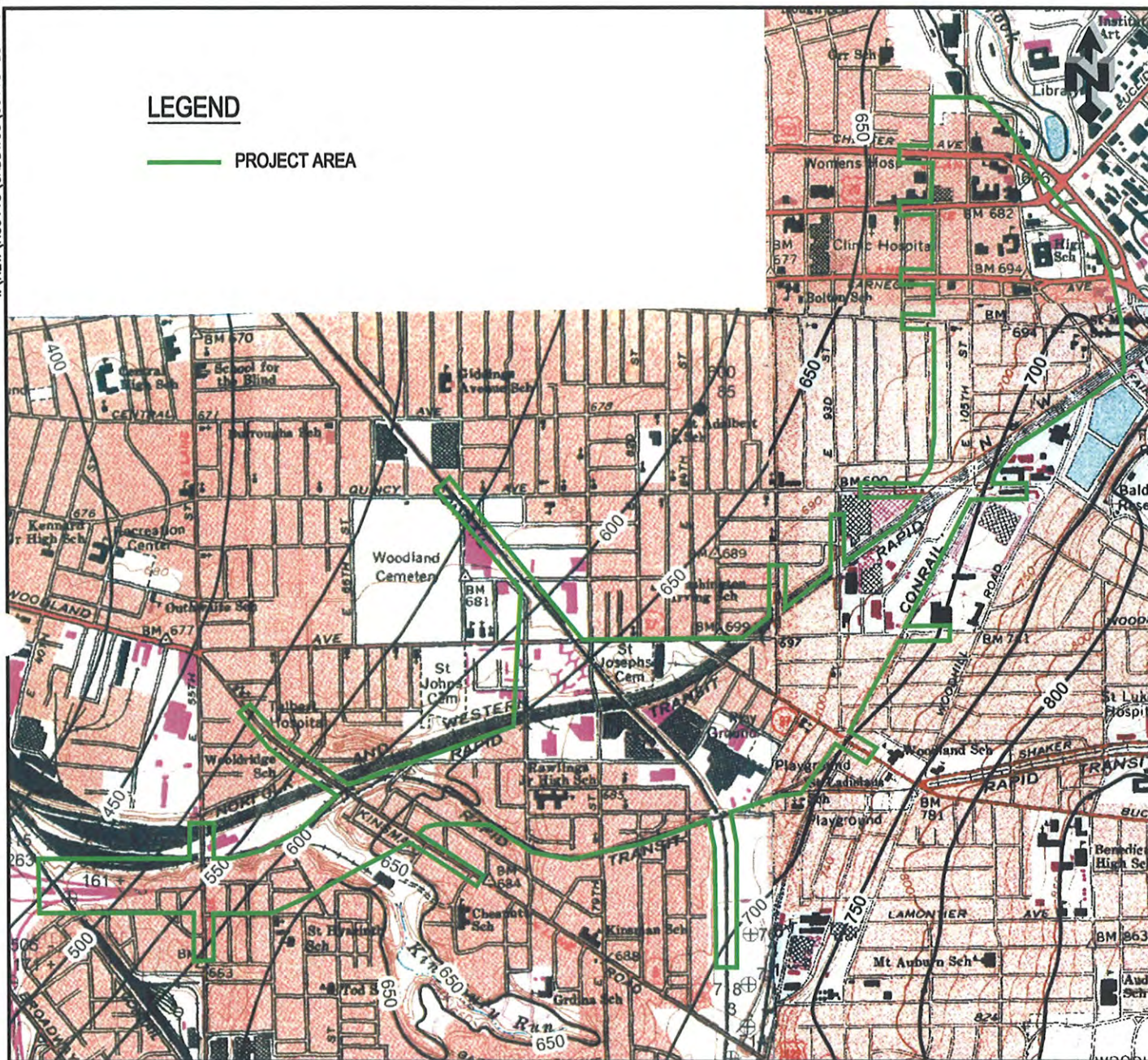
# BEDROCK TOPOGRAPHY MAP

1996 CLEVELAND SOUTH, 2002 SHAKER HEIGHTS,  
2002 EAST CLEVELAND OHIO QUADRANGLES



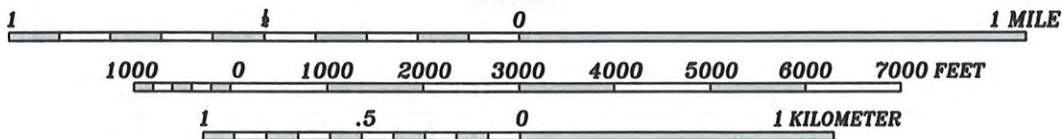
## LEGEND

— PROJECT AREA



## SCALE

1:24000



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CLEVELAND, CUYAHOGA COUNTY, OHIO



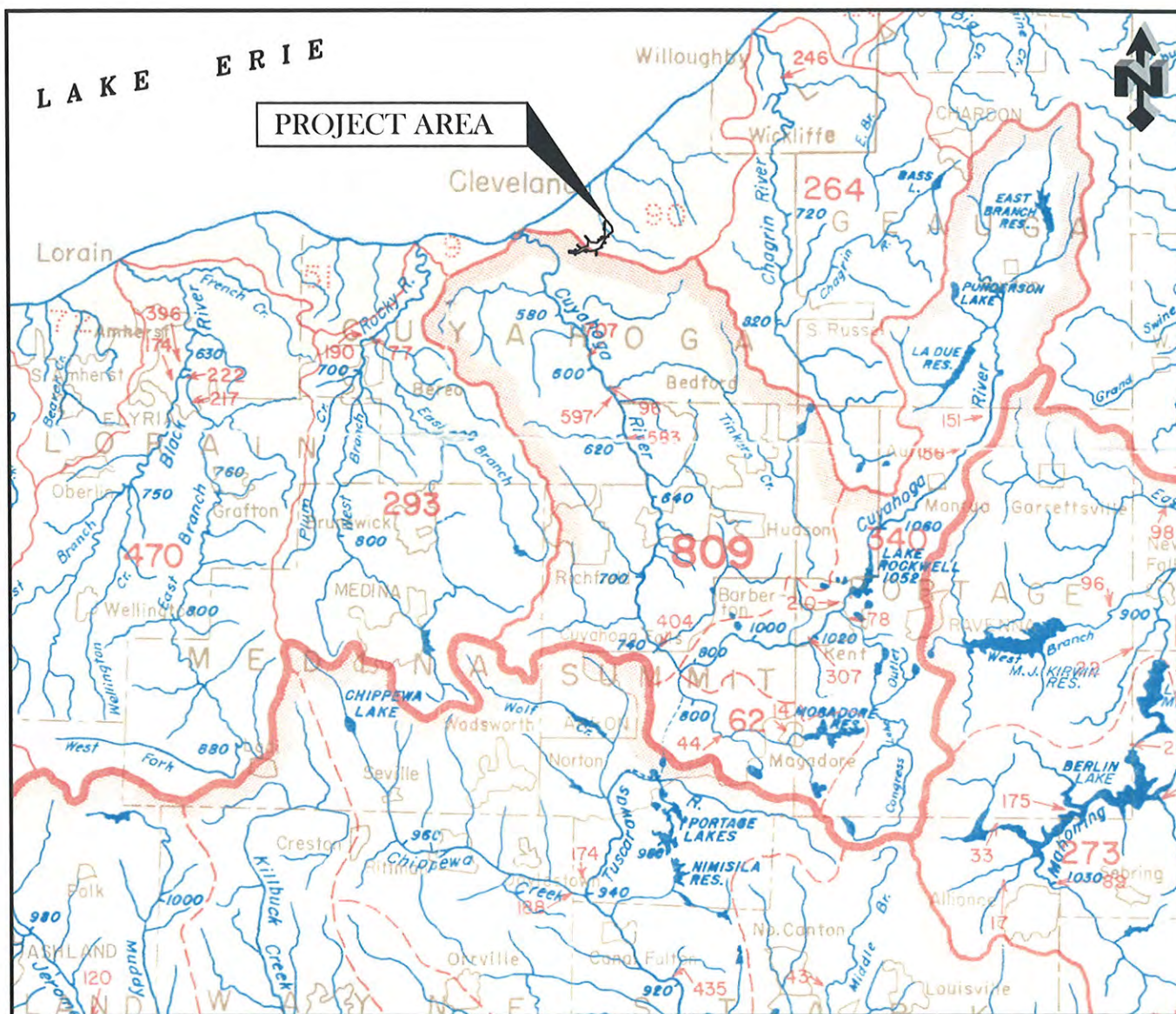
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## **APPENDIX D**

### **PRINCIPAL STREAMS AND THEIR DRAINAGE AREAS MAP**

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# PRINCIPAL STREAMS AND DRAINAGE AREAS



## LEGEND

Areas of drainage basins, in square miles, are shown by red figures as follows:

- 1757** Areas enclosed by shaded red lines
- 499** Areas enclosed by unshaded red lines
- 313** Auxiliary land areas within the limits of the State.
- 59.36** Drainage areas above points indicated by arrows



Approximate low-water elevation in feet above sea level.



Navigation lock and dam.



Reservoir



Selected urbanized areas, communities, and county seats chosen to aid in map orientation.





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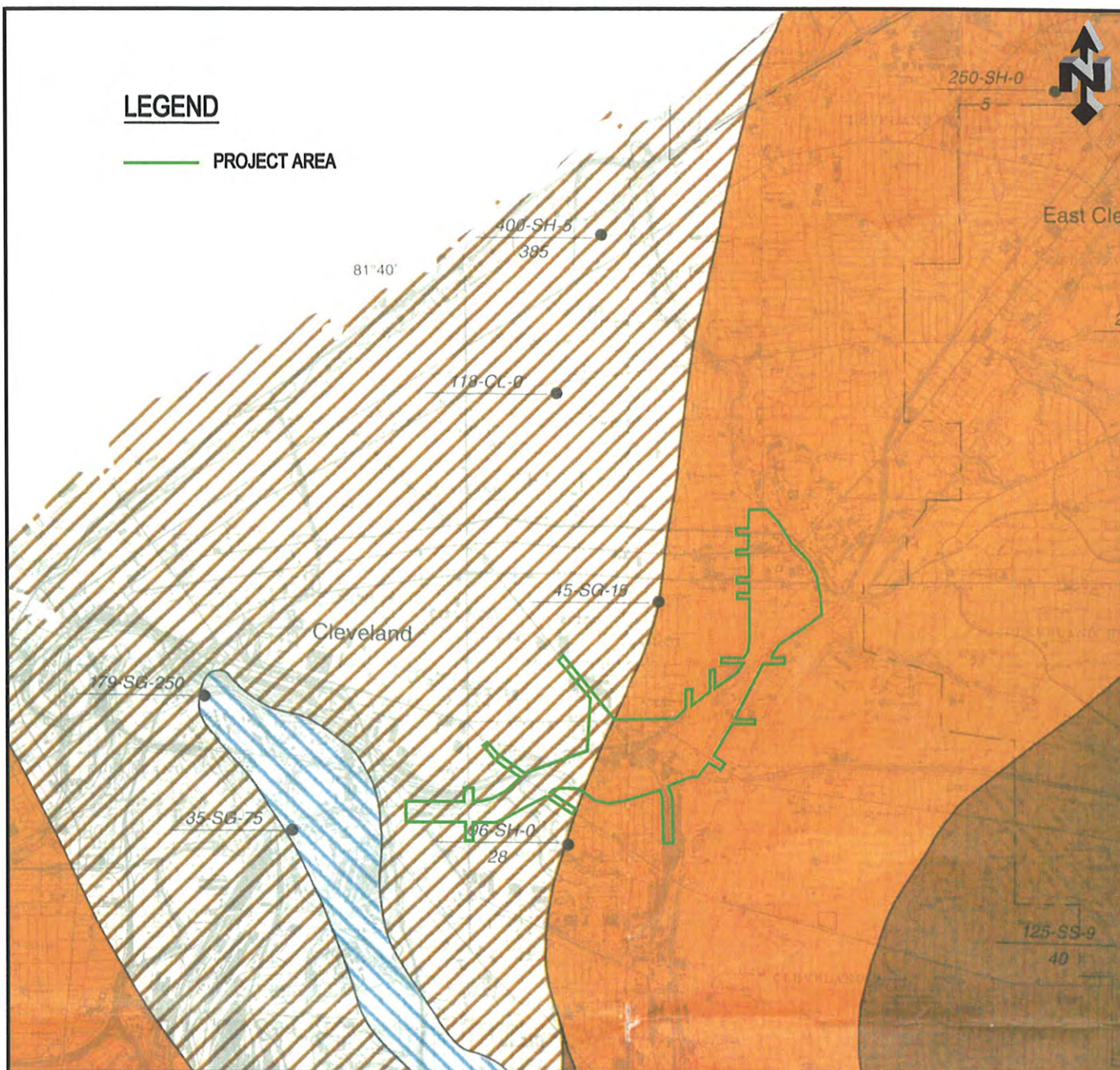
**APPENDIX E**

**GROUND WATER RESOURCES MAP**

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# GROUND WATER RESOURCES MAP

## CUYAHOGA COUNTY, OHIO 1992



### LEGEND

— PROJECT AREA

### LEGEND

AREAS IN WHICH LESS THAN 3 GALLONS PER MINUTE MAY BE DEVELOPED



Impermeable deposits, basically clay overlaying shale or shaley sandstone, provide a very poor area for even minimal domestic supplies. Brackish water and dry wells are common. Storage is necessary to supply peak demands.

AREAS IN WHICH 3 TO 10 GALLONS PER MINUTE MAY BE DEVELOPED



Buried valleys contain 200 to 300 feet of fine sand, silt, and clay. Drilled wells yield meager supplies unless encountering thin, isolated sand and gravel lenses.



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## **APPENDIX F**

### **AERIAL PHOTOGRAPHS**

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# 1963 AERIAL PHOTOGRAPH

SEE SHEET 2



SEE SHEET 2

1/24/2009 10:01:13 CAD/US/0113 AER-03.dwg hndy Dec 17, 2009



\\HW2009\00913\CAD\00913-4R-ES.dwg 17:20:09

# 1963 AERIAL PHOTOGRAPH

SEE SHEET 3

SHEET 1



PROJECT AREA



# 1963 AERIAL PHOTOGRAPH



SEE SHEET 2

SEE SHEET 4



## I:\H2M\2009\H09113\CADD\WGS\09113-AER-63.dwg lmdyay Dec 23, 2009

SHEET 5

SHEET 3

SHEET 4

**SHEET 1**

SHEET 2

## PROJECT AREA

SCALE: 1"=500'

A horizontal number line with arrows at both ends. It is labeled with the numbers 0, 250, 500, 750, and 1000. There are tick marks at each of these intervals, and the line is divided into four equal segments of 250 units each.

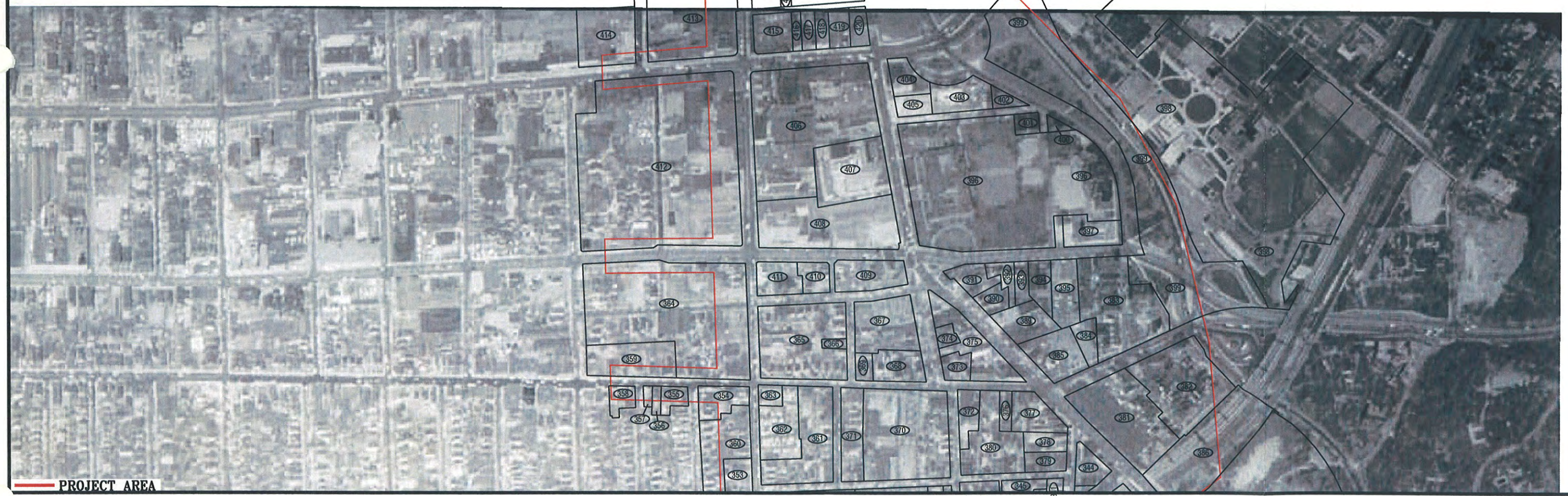
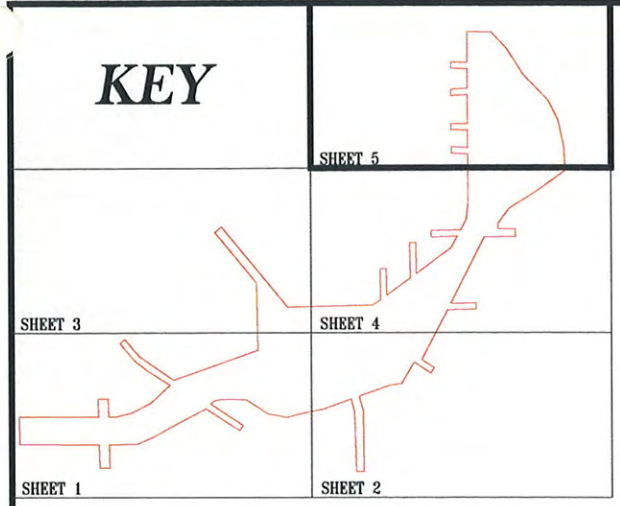
SHEET 4 OF 5  
OPPORTUNITY CORRIDOR  
CLEVELAND, CUYAHOGA COUNTY, OHIO





# 1963 AERIAL PHOTOGRAPH

## KEY



PROJECT AREA

SEE SHEET 4

SCALE: 1"=500'





# 1973 AERIAL PHOTOGRAPH

SEE SHEET 2





HzW2009091302AD06S0913-LET-3.dwg, Hazmat Dec-17-2009

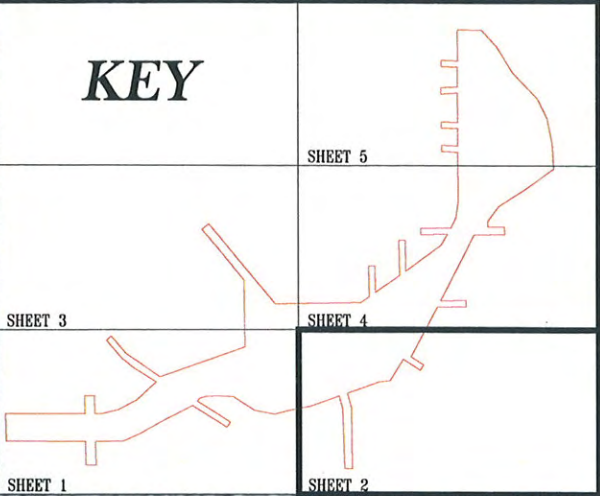
# 1973 AERIAL PHOTOGRAPH

SEE SHEET 3

SHEET 1



## KEY



PROJECT AREA



SCALE: 1"=500'



SHEET 2 OF 5  
OPPORTUNITY CORRIDOR  
CLEVELAND, CUYAHOGA COUNTY, OHIO



## I:\HZM\2009\H09113\CADD\WGS\09113-AER-73.dwg lenyay Dec 17, 2009



## PROJECT AREA



SHEET 3 OF 5

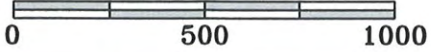


# 1973 AERIAL PHOTOGRAPH

SEE SHEET 5



SCALE: 1"=500'





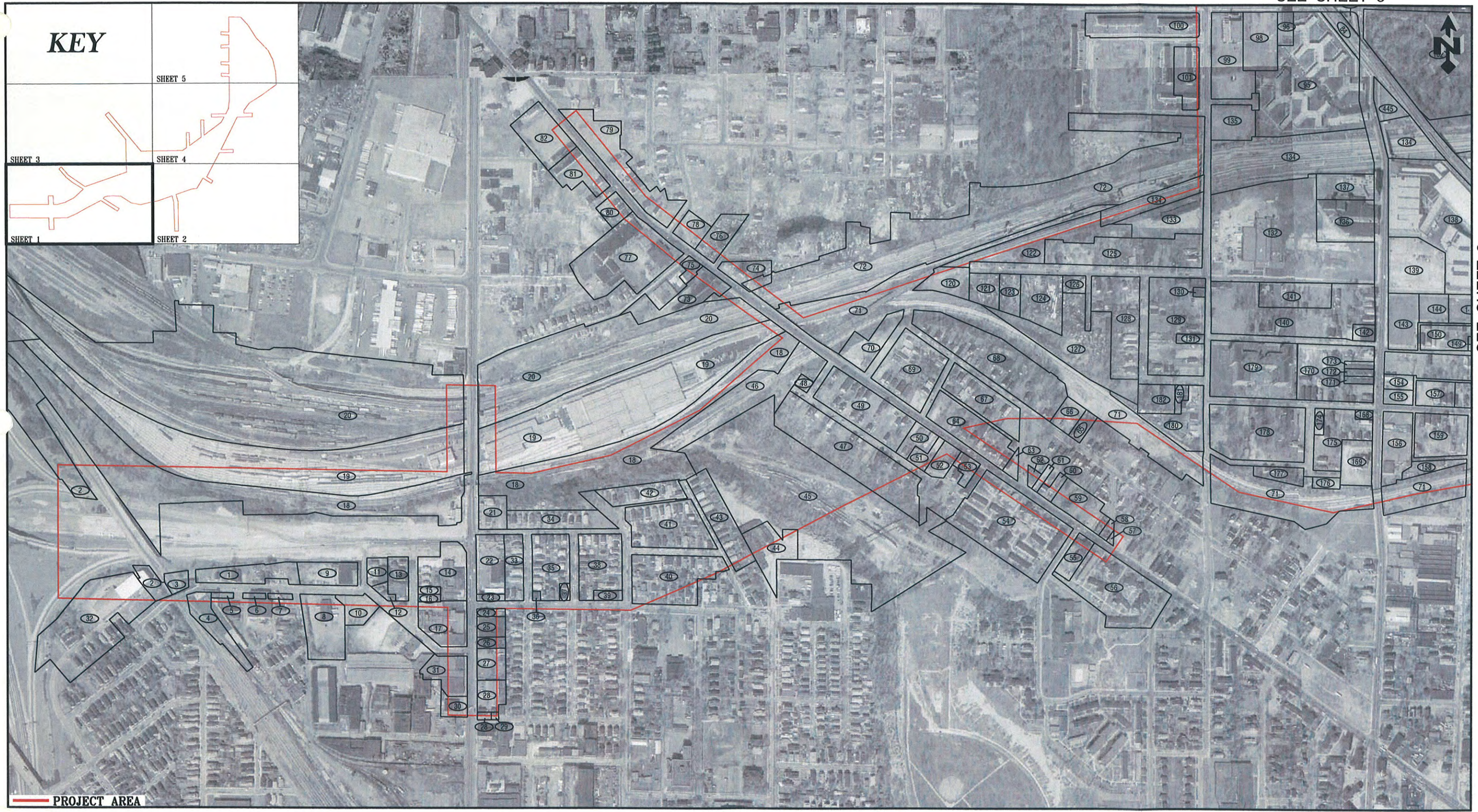
# 1973 AERIAL PHOTOGRAPH





# 1986 AERIAL PHOTOGRAPH

SEE SHEET 3



SEE SHEET 2

KEY

SHEET 5

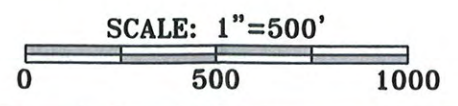
SHEET 4

SHEET 2

SHEET 3

SHEET 1

PROJECT AREA



SHEET 1 OF 5  
OPPORTUNITY CORRIDOR  
CLEVELAND, CUYAHOGA COUNTY, OHIO



\\HWZ009\00913\CAD\DWG\0913-LEP-86.dwg, Linbury Dec 11, 2009

# 1986 AERIAL PHOTOGRAPH

SEE SHEET 4

SHEET 1





I:\HZW\2009\H09113\CADD\WG\09113-AER-86.dwg lendlvay Dec 17, 2009



SEE SHEET 4

SCALE: 1"=500'

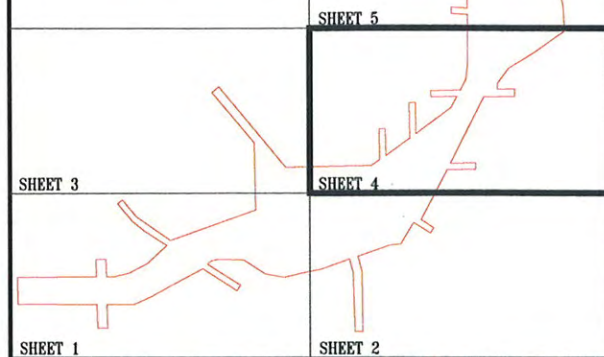
A horizontal scale bar with three segments. The first segment is labeled '0' at its left end. The second segment is labeled '500' at its right end. The third segment is labeled '1000' at its right end. The bar is divided into three equal parts by vertical tick marks.



# 1986 AERIAL PHOTOGRAPH

SEE SHEET 5

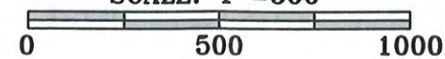
## KEY



PROJECT AREA

SEE SHEET 2

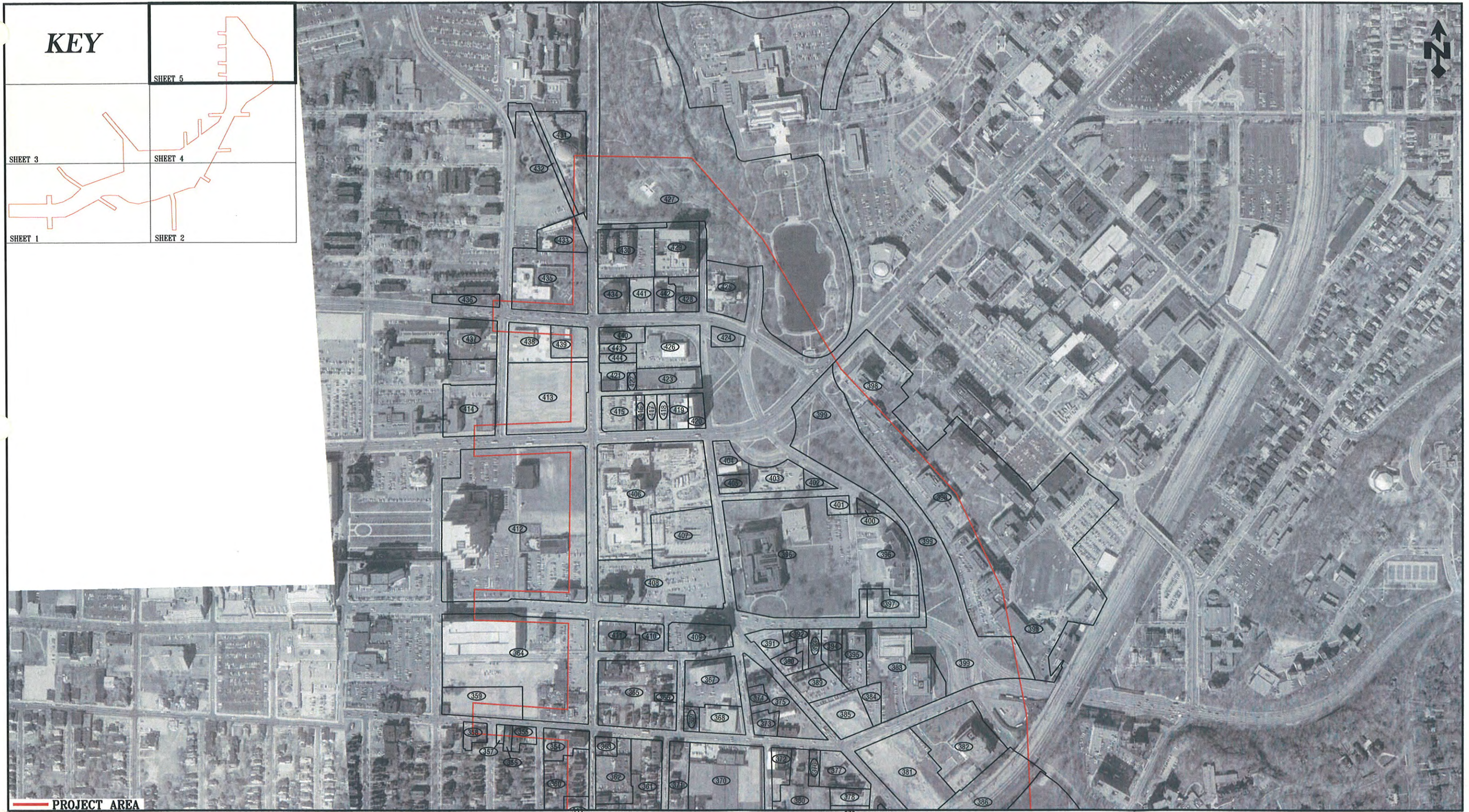
SCALE: 1"=500'





\\HW-2009\001\13\CD\DWG\0913-ALR-86.dwg 1/10/13 1:17:20 PM

1986 AERIAL PHOTOGRAPH





# 1999 AERIAL PHOTOGRAPH

SEE SHEET 3



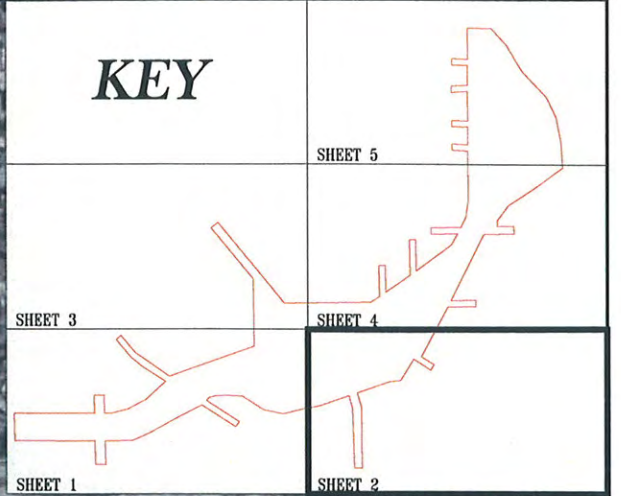


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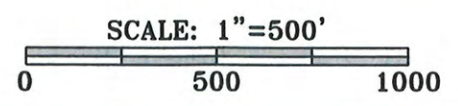
# 1999 AERIAL PHOTOGRAPH

SEE SHEET 4

SHEET 1



PROJECT AREA





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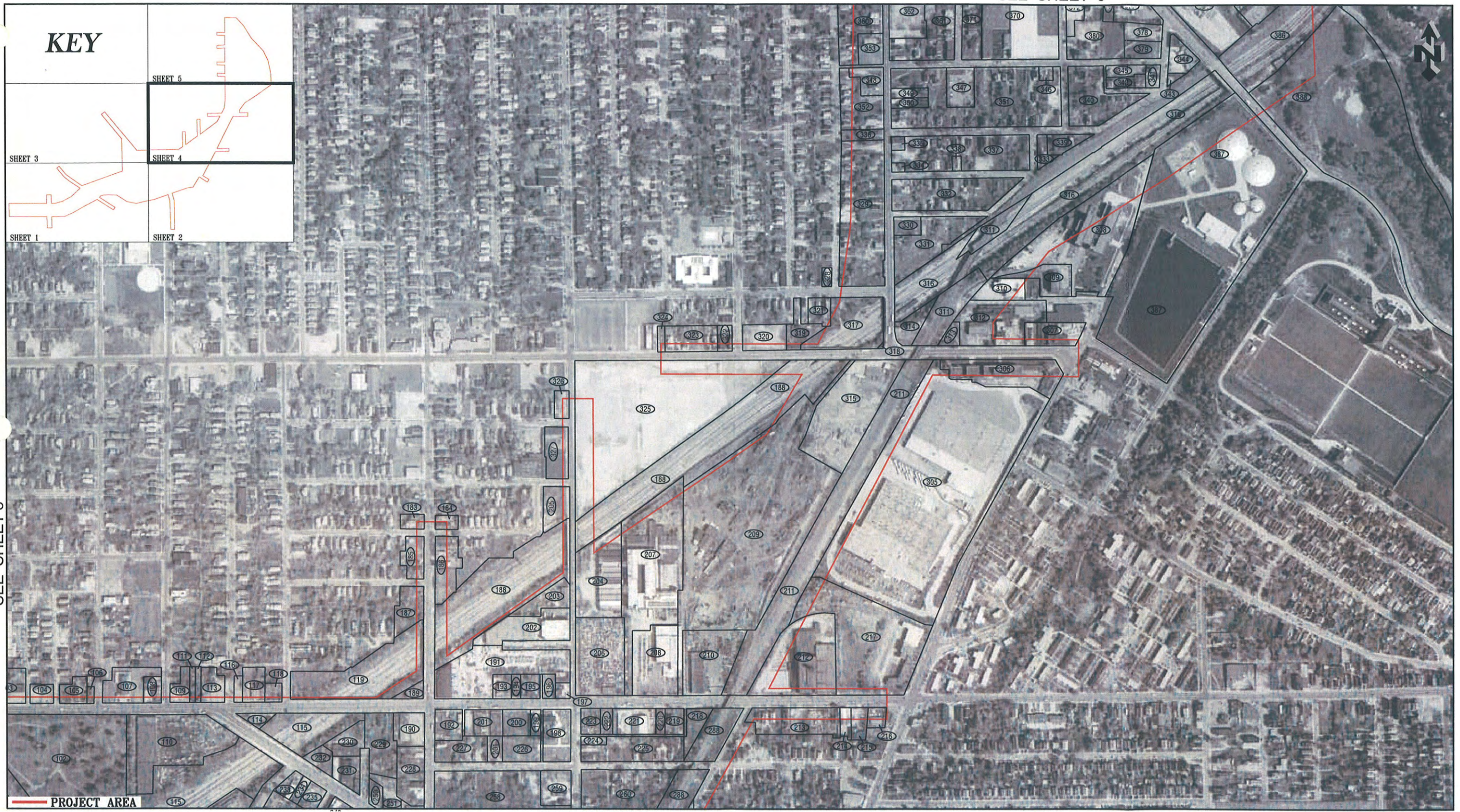
SCALE: 1"=500'

A horizontal scale bar with a double-line border. It is divided into three equal segments by two vertical tick marks. Below the bar, the numbers 0, 500, and 1000 are printed at the start, middle, and end respectively.



1999 AERIAL PHOTOGRAPH

SEE SHEET 5



SEE SHEET 3

SEE SHEET 2

SCALE: 1"=500'





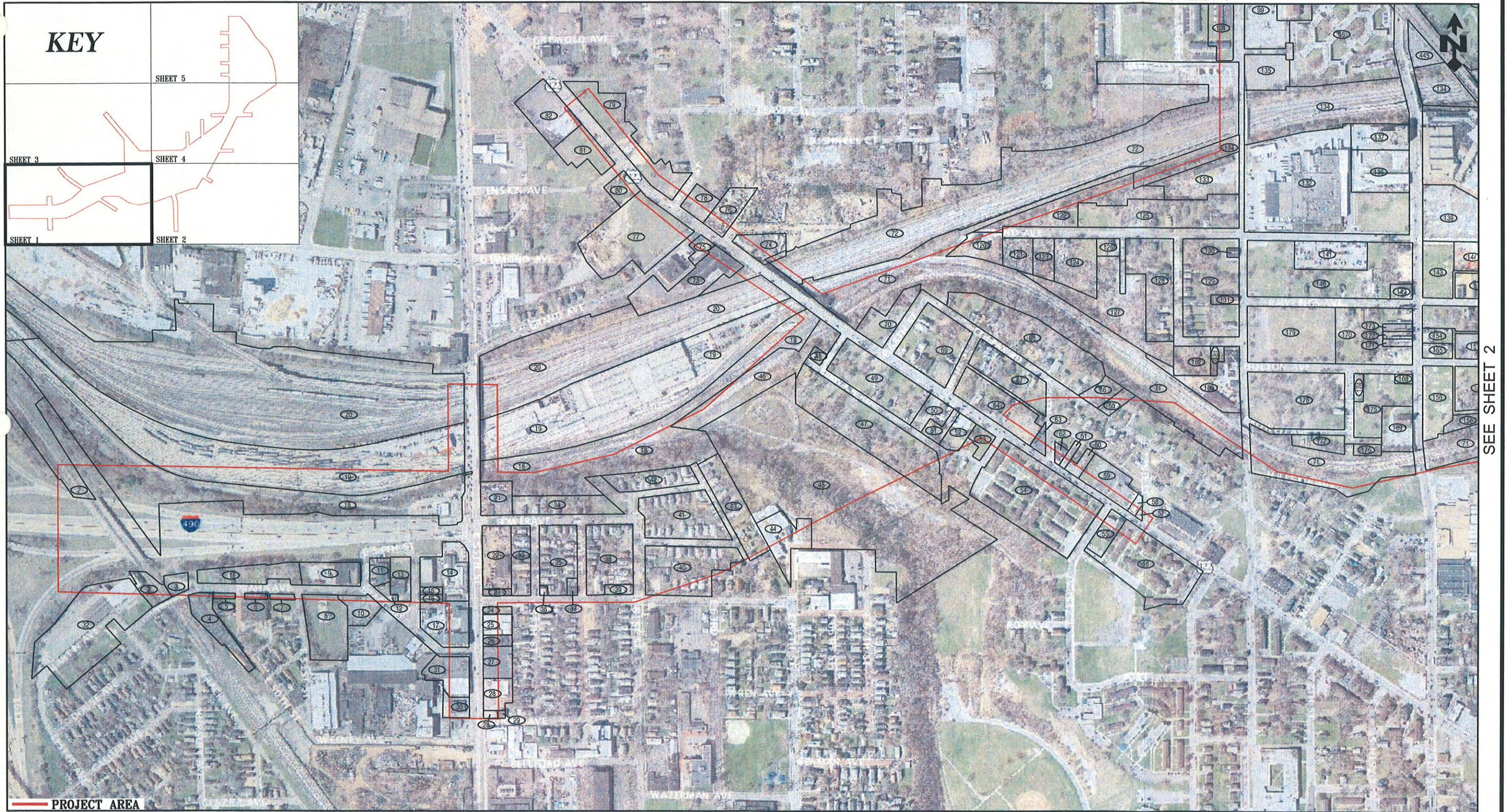
# 1999 AERIAL PHOTOGRAPH





# 2008 AERIAL PHOTOGRAPH

SEE SHEET 3





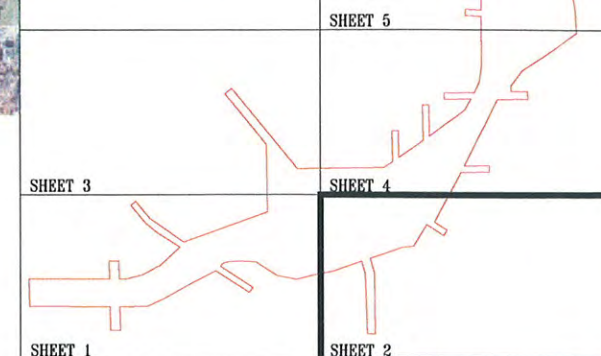
\\HW2009\HW01\13\CAD\DWG\0913-08.dwg, 10/13/2009, 1:10:00 PM, 10/13/2009

# 2008 AERIAL PHOTOGRAPH

SEE SHEET 4



## KEY

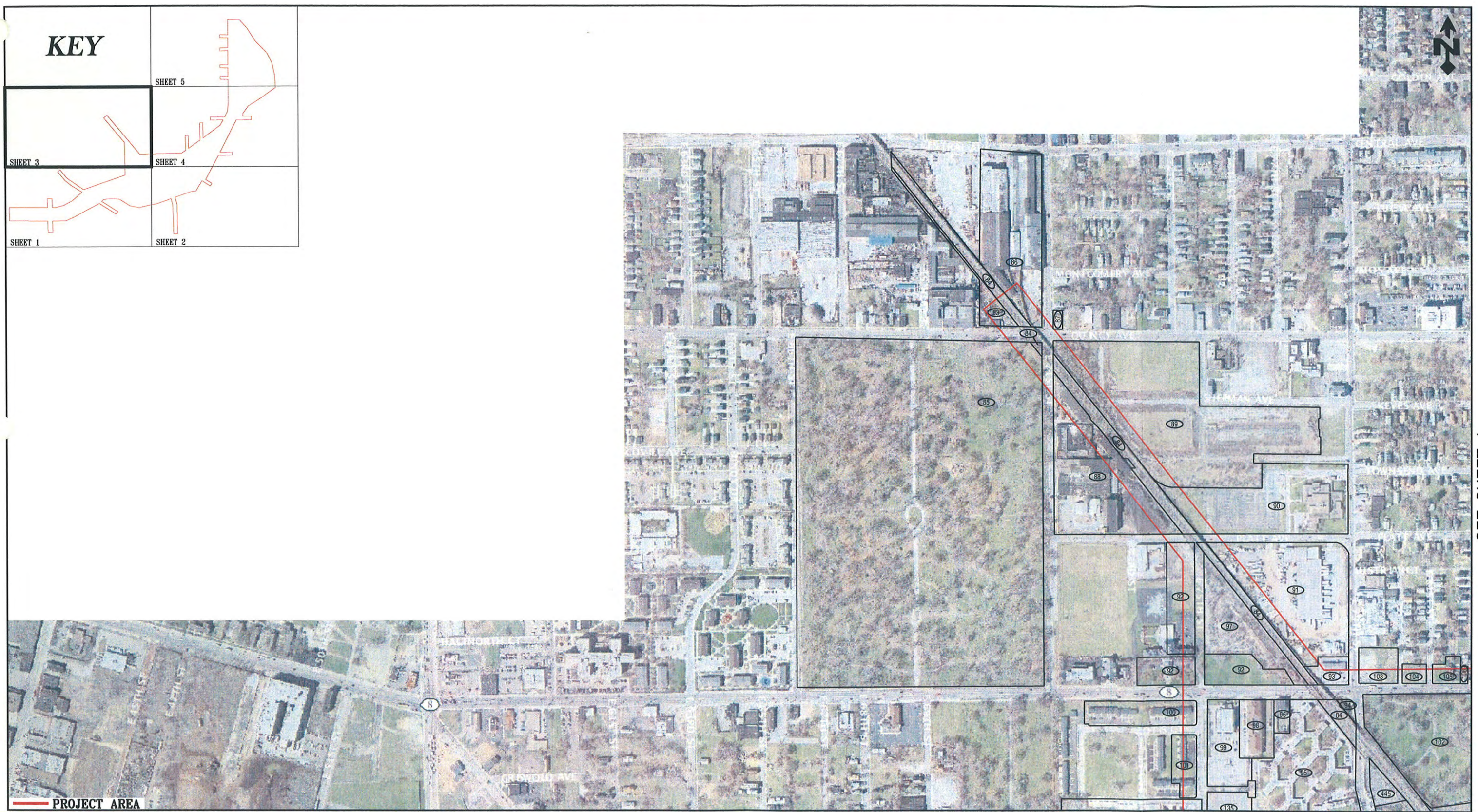
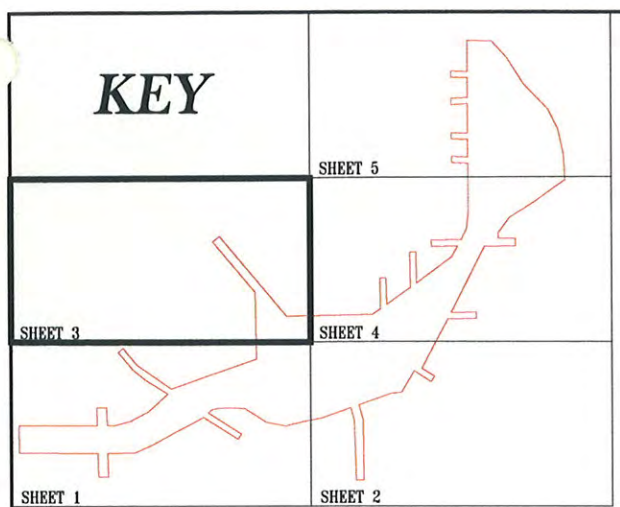


SHEET 1

PROJECT AREA



# 2008 AERIAL PHOTOGRAPH

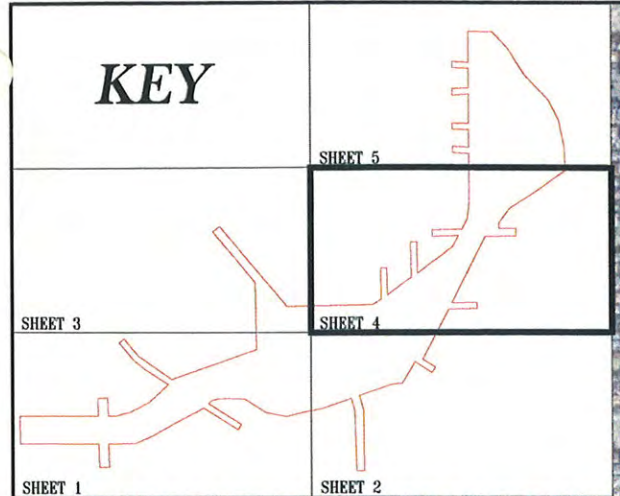




2008 AERIAL PHOTOGRAPH

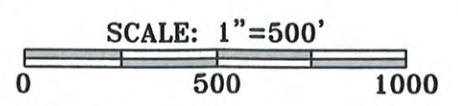
SEE SHEET 5

KEY



SEE SHEET 3

SEE SHEET 2





\\HW2009\HW13\GAD\W65\0913-48-48.dwg, Linework, Dec 17, 2009

# 2008 AERIAL PHOTOGRAPH





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## **APPENDIX G**

### **OIL AND GAS WELL MAP**

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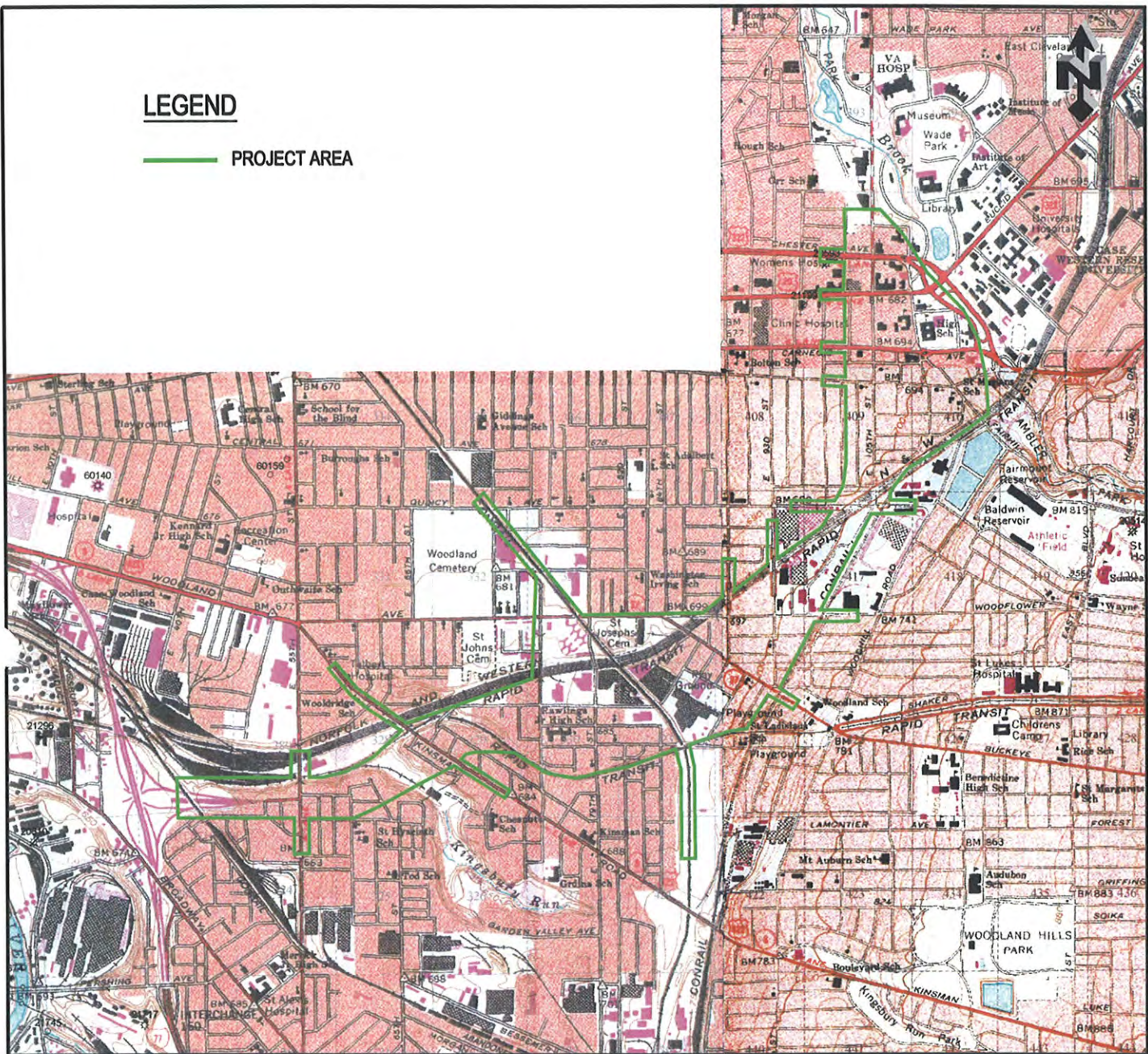
# OIL AND GAS WELL MAP

1983 CLEVELAND SOUTH, 1983 SHAKER HEIGHTS,  
1983 EAST CLEVELAND OHIO QUADRANGLES

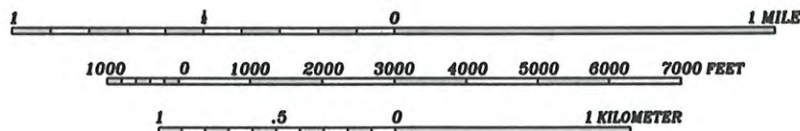


## LEGEND

— PROJECT AREA



## SCALE



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CONSULTANTS, LLC

OPPORTUNITY CORRIDOR  
CLEVELAND, CUYAHOGA COUNTY, OHIO